



Attorney Docket Number I 97269 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Lutticken et al

Serial No.: 09/084,837

Group Art Unit: 1648

Filed: May 26, 1998

Examiner: M. Mosher

For: RECOMBINANT BIRNAVIRUS VACCINE

SUBSTITUTE SUBMISSION OF SEQUENCE LISTING

Commissioner of Patents
Alexandria, VA 22313

October 14, 2003

Sir:

Applicants are submitting herewith a Substitute Sequence Listing for the above-identified application both in paper copy form and in computer readable form.

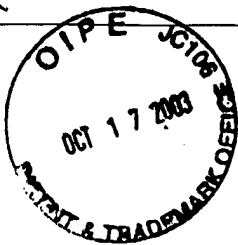
The name of the file on the computer readable form is 1997.269.ST25.txt. The paper copy and the computer readable form are the same. No new matter is added hereby.

Please replace the current sequence listing in the specification with the instant sequence listing.

Respectfully submitted,

William P. Ramey III
Attorney for Applicants
Registration No. 44,295

Akzo Nobel Patent Department
Intervet Inc.
405 State Street
P.O. Box 318
Millsboro, DE 19966
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1618
BOT-seg

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On: October 15, 2003

Signature

Typed or Printed Name KATRINA MEARS

USSN 09/084 837
Docket Number I 97269 US

Postcard

Submission of Substitute Sequence Listing (1 pg)
Paper Copy of Sequence Listing (25 pages)
CRF of Sequence Listing (1 disk)



1997-269.ST25.txt
SEQUENCE LISTING

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gaactctctc	tggacacaga	gtctatggat	atgctccaga	tggggacttt	ccactggaga	1991
ctgggagaga	ctacaccgtt	gtcccaatag	atgatgtctg	ggacgacagc	attatgctgt	2051
ccaaagatcc	catacctcct	attgtgggaa	acagtggaaa	tctagccata	gcttacatgg	2111
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gagggccaag	ccccggccag	ctaaagtact	ggcagaacac	acgagaaata	ccggacccaa	2831
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tcctaagggc	agctacgtcg	atctacgggg	ctccaggaca	ggcagagcca	ccccaaagctt	2951
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agatgaaaga	tctgctcttg	actgcgatgg	agatgaagca	tcgcaatccc	aggcgggctc	3071
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gctggatcag gaccgtctct gatgaggacc ttgagtgagg ctcctgggag tctcccgaca 3191
ccacccgcgc aggtgtggac accaattcgg ccttacaaca tcccaaattg gatccgttcg 3251
cgggtcccct 3261

<210> 4
<211> 145
<212> PRT
<213> Infectious bursal disease virus

<400> 4

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1 5 10 15

Arg Ser Asn Pro Thr Asp Cys Ser Val His Thr Glu Pro Ser Asp Ala
20 25 30

Asn Asn Arg Thr Gly Val His Ser Gly Arg His Pro Gly Glu Ala His
35 40 45

Ser Gln Val Arg Asp Leu Asp Leu Gln Phe Asp Cys Gly Gly His Arg
50 55 60

Val Arg Ala Asn Cys Leu Phe Pro Trp Ile Pro Trp Leu Asn Cys Gly
65 70 75 80

Cys Ser Leu His Thr Ala Gly Gln Trp Glu Leu Gln Val Arg Ser Asp
85 90 95

Ala Pro Asp Cys Pro Glu Pro Thr Gly Gln Leu Gln Leu Leu Gln Ala
100 105 110

Ser Glu Ser Glu Ser His Ser Glu Val Lys His Thr Ser Trp Trp Arg
115 120 125

Leu Cys Thr Lys Arg His His Lys Arg Arg Asp Leu Pro Arg Lys Pro
130 135 140

Glu
145

<210> 5
<211> 3261
<212> DNA
<213> Infectious bursal disease virus

<220>
<221> CDS

<222> (131)..(3166)

<400> 5

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gatcgacgag atg aca aac ctg caa gat caa acc caa cag att gtt ccg      169
      Met Thr Asn Leu Gln Asp Gln Thr Gln Gln Ile Val Pro
      1          5          10

ttc ata cgg agc ctt ctg atg cca aca acc gga ccg gcg tcc att ccg      217
Phe Ile Arg Ser Leu Leu Met Pro Thr Thr Gly Pro Ala Ser Ile Pro
      15          20          25

gac gac acc ctg gag aag cac act ctc agg tca gag acc tcg acc tac      265
Asp Asp Thr Leu Glu Lys His Thr Leu Arg Ser Glu Thr Ser Thr Tyr
      30          35          40          45

aat ttg act gtg ggg gac aca ggg tca ggg cta att gtc ttt ttc cct      313
Asn Leu Thr Val Gly Asp Thr Gly Ser Gly Leu Ile Val Phe Phe Pro
      50          55          60

gga ttc cct ggc tca att gtg ggt gct cac tac aca ctg cag ggc aat      361
Gly Phe Pro Gly Ser Ile Val Gly Ala His Tyr Thr Leu Gln Gly Asn
      65          70          75

ggg aac tac aag ttc gat cag atg ctc ctg act gcc cag aac cta ccg      409
Gly Asn Tyr Lys Phe Asp Gln Met Leu Leu Thr Ala Gln Asn Leu Pro
      80          85          90

gcc agt tac aac tac tgc agg cta gtg agt cgg agt ctc aca gtg agg      457
Ala Ser Tyr Asn Tyr Cys Arg Leu Val Ser Arg Ser Leu Thr Val Arg
      95          100          105

tca agc aca ctt cct ggt ggc gtt tat gca cta aac ggc acc ata aac      505
Ser Ser Thr Leu Pro Gly Gly Val Tyr Ala Leu Asn Gly Thr Ile Asn
      110          115          120          125

gcc gtg acc ttc caa gga agc ctg agt gaa ctg aca gat gtt agc tac      553
Ala Val Thr Phe Gln Gly Ser Leu Ser Glu Leu Thr Asp Val Ser Tyr
      130          135          140

aat ggg ttg atg tct gca aca gcc aac atc aac gac aaa att ggg aac      601
Asn Gly Leu Met Ser Ala Thr Ala Asn Ile Asn Asp Lys Ile Gly Asn
      145          150          155

gtc cta gta ggg gaa ggg gtc acc gtc ctc agc tta ccc aca tca tat      649
Val Leu Val Gly Glu Gly Val Thr Val Leu Ser Leu Pro Thr Ser Tyr
      160          165          170

gat ctt ggg tat gtg agg ctt ggt gac ccc att ccc gca ata ggg ctt      697
Asp Leu Gly Tyr Val Arg Leu Gly Asp Pro Ile Pro Ala Ile Gly Leu
      175          180          185

gac cca aaa atg gta gcc aca tgt gac agc agt gac agg ccc aga gtc      745
Asp Pro Lys Met Val Ala Thr Cys Asp Ser Ser Asp Arg Pro Arg Val
      190          195          200          205

tac acc ata act gca gcc gat gat tac caa ttc tca tca cag tac caa      793
Tyr Thr Ile Thr Ala Ala Asp Asp Tyr Gln Phe Ser Ser Gln Tyr Gln
      210          215          220

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1997-269.ST25.txt

cca ggt ggg gta aca atc aca ctg ttc tca gcc aac att gat gcc atc Pro Gly Gly Val Thr Ile Thr Leu Phe Ser Ala Asn Ile Asp Ala Ile	841
aca agc ctc agc gtt ggg gga gag ctc gtg ttt caa aca agc gtc cac Thr Ser Leu Ser Val Gly Gly Glu Leu Val Phe Gln Thr Ser Val His	889
ggc ctt gta ctg ggc gcc acc atc tac ctc ata ggc ttt gat ggg aca Gly Leu Val Leu Gly Ala Thr Ile Tyr Leu Ile Gly Phe Asp Gly Thr	937
acg gta atc acc agg gct gtg gcc gca aac aat ggg ctg acg acc ggc Thr Val Ile Thr Arg Ala Val Ala Ala Asn Asn Gly Leu Thr Thr Gly	985
acc gac aac ctt atg cca ttc aat ctt gtg att cca aca aac gag ata Thr Asp Asn Leu Met Pro Phe Asn Leu Val Ile Pro Thr Asn Glu Ile	1033
acc cag cca atc aca tcc atc aaa ctg gag ata gtg acc tcc aaa agt Thr Gln Pro Ile Thr Ser Ile Lys Leu Glu Ile Val Thr Ser Lys Ser	1081
ggt ggt cag gca ggg gat cag atg tca tgg tcg gca aga ggg agc cta Gly Gly Gln Ala Gly Asp Gln Met Ser Trp Ser Ala Arg Gly Ser Leu	1129
gca gtg acg atc cat ggt ggc aac tat cca ggg gcc ctc cgt ccc gtc Ala Val Thr Ile His Gly Gly Asn Tyr Pro Gly Ala Leu Arg Pro Val	1177
acg cta gtg gcc tac gaa aga gtg gca aca gga tcc gtc gtt acg gtc Thr Leu Val Ala Tyr Glu Arg Val Ala Thr Gly Ser Val Val Thr Val	1225
gct ggg gtg agc aac ttc gag ctg atc cca aat cct gaa cta gca aag Ala Gly Val Ser Asn Phe Glu Leu Ile Pro Asn Pro Glu Leu Ala Lys	1273
aac ctg gtt aca gaa tac ggc cga ttt gac cca gga gcc atg aac tac Asn Leu Val Thr Glu Tyr Gly Arg Phe Asp Pro Gly Ala Met Asn Tyr	1321
aca aaa ttg ata ctg agt gag agg gac cgt ctt ggc atc aag acc gtc Thr Lys Leu Ile Leu Ser Glu Arg Asp Arg Leu Gly Ile Lys Thr Val	1369
tgg cca aca agg gag tac act gac ttt cgt gaa tac ttc atg gag gtg Trp Pro Thr Arg Glu Tyr Thr Asp Phe Arg Glu Tyr Phe Met Glu Val	1417
gcc gac ctc aac tct ccc ctg aag att gca gga gca ttc ggc ttc aaa Ala Asp Leu Asn Ser Pro Leu Lys Ile Ala Gly Ala Phe Gly Phe Lys	1465
gac ata atc cgg gcc ata agg agg ata gct gtg ccg gtg gtc tcc aca Asp Ile Ile Arg Ala Ile Arg Arg Ile Ala Val Pro Val Val Ser Thr	1513
ttg ttc cca cct gcc gct ccc cta gcc cat gca att ggg gaa ggt gta Leu Phe Pro Pro Ala Ala Pro Leu Ala His Ala Ile Gly Glu Gly Val	1561

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465	470	475	
gac tac ctg ctg ggc gat gag gca cag gct gct tca gga act gct cga Asp Tyr Leu Leu Gly Asp Glu Ala Gln Ala Ala Ser Gly Thr Ala Arg 480 485 490			1609
gcc gcg tca gga aaa gca aga gct gcc tca ggc cgc ata agg cag ctg Ala Ala Ser Gly Lys Ala Arg Ala Ala Ser Gly Arg Ile Arg Gln Leu 495 500 505			1657
act ctc gcc gcc gac aag ggg tac gag gta gtc gcg aat cta ttc cag Thr Leu Ala Ala Asp Lys Gly Tyr Glu Val Val Ala Asn Leu Phe Gln 510 515 520 525			1705
gtg ccc cag aat ccc gta gtc gac ggg att ctt gct tca cct ggg gta Val Pro Gln Asn Pro Val Val Asp Gly Ile Leu Ala Ser Pro Gly Val 530 535 540			1753
ctc cgc ggt gca cac aac ctc gac tgc gtg tta aga gag ggt gcc acg Leu Arg Gly Ala His Asn Leu Asp Cys Val Leu Arg Glu Gly Ala Thr 545 550 555			1801
cta ttc cct gtg gtt att acg aca gtg gaa gac gcc atg aca ccc aaa Leu Phe Pro Val Val Ile Thr Thr Val Glu Asp Ala Met Thr Pro Lys 560 565 570			1849
gca ttg aac agc aaa atg ttt gct gtc att gaa ggc gtg cga gaa gac Ala Leu Asn Ser Lys Met Phe Ala Val Ile Glu Gly Val Arg Glu Asp 575 580 585			1897
ctc caa cct cca tct caa aga gga tcc ttc ata cga act ctc tct gga Leu Gln Pro Pro Ser Gln Arg Gly Ser Phe Ile Arg Thr Leu Ser Gly 590 595 600 605			1945
cac aga gtc tat gga tat gct cca gat ggg gta ctt cca ctg gag act His Arg Val Tyr Gly Tyr Ala Pro Asp Gly Val Leu Pro Leu Glu Thr 610 615 620			1993
ggg aga gac tac acc gtt gtc cca ata gat gat gtc tgg gac gac agc Gly Arg Asp Tyr Thr Val Val Pro Ile Asp Asp Val Trp Asp Asp Ser 625 630 635			2041
att atg ctg tcc aaa gat ccc ata cct cct att gtg gga aac agt gga Ile Met Leu Ser Lys Asp Pro Ile Pro Pro Ile Val Gly Asn Ser Gly 640 645 650			2089
aat cta gcc ata gct tac atg gat gtg ttt cga ccc aaa gtc cca atc Asn Leu Ala Ile Ala Tyr Met Asp Val Phe Arg Pro Lys Val Pro Ile 655 660 665			2137
cat gtg gct atg acg gga gcc ctc aat gct tgt ggc gag att gag aaa His Val Ala Met Thr Gly Ala Leu Asn Ala Cys Gly Glu Ile Glu Lys 670 675 680 685			2185
gta agc ttt aga agc acc aag ctc gcc act gca cac cga ctt ggc ctt Val Ser Phe Arg Ser Thr Lys Leu Ala Thr Ala His Arg Leu Gly Leu 690 695 700			2233
agg ttg gct ggt ccc gga gca ttc gat gta aac acc ggg ccc aac tgg Arg Leu Ala Gly Pro Gly Ala Phe Asp Val Asn Thr Gly Pro Asn Trp 705 710 715			2281

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gca acg ttc atc aaa cgt ttc cct cac aat cca cgc gac tgg gac agg Ala Thr Phe Ile Lys Arg Phe Pro His Asn Pro Arg Asp Trp Asp Arg 720 725 730	2329
ctc ccc tac ctc aac cta cca tac ctt cca ccc aat gca gga cgc cag Leu Pro Tyr Leu Asn Leu Pro Tyr Leu Pro Pro Asn Ala Gly Arg Gln 735 740 745	2377
tac cac ctt gcc atg gct gca tca gag ttc aaa gag acc ccc gaa ctc Tyr His Leu Ala Met Ala Ala Ser Glu Phe Lys Glu Thr Pro Glu Leu 750 755 760 765	2425
gag agt gcc gtc aga gca atg gaa gca gca gcc aac gtg gac cca cta Glu Ser Ala Val Arg Ala Met Glu Ala Ala Asn Val Asp Pro Leu 770 775 780	2473
ttc caa tct gca ctc agt gtg ttc atg tgg ctg gaa gag aat ggg att Phe Gln Ser Ala Leu Ser Val Phe Met Trp Leu Glu Glu Asn Gly Ile 785 790 795	2521
gtg act gac atg gcc aac ttc gca ctc agc gac ccg aac gcc cat cgg Val Thr Asp Met Ala Asn Phe Ala Leu Ser Asp Pro Asn Ala His Arg 800 805 810	2569
atg cga aat ttt ctt gca aac gca cca caa gca ggc agc aag tcg caa Met Arg Asn Phe Leu Ala Asn Ala Pro Gln Ala Gly Ser Lys Ser Gln 815 820 825	2617
agg gcc aag tac ggg aca gca ggc tac gga gtg gag gct cgg ggc ccc Arg Ala Lys Tyr Gly Thr Ala Gly Tyr Gly Val Glu Ala Arg Gly Pro 830 835 840 845	2665
aca cca gag gaa gca cag agg gaa aaa gac aca cgg atc tca aag aag Thr Pro Glu Glu Ala Gln Arg Glu Lys Asp Thr Arg Ile Ser Lys Lys 850 855 860	2713
atg gag acc atg ggc atc tac ttt gca aca cca gaa tgg gta gca ctc Met Glu Thr Met Gly Ile Tyr Phe Ala Thr Pro Glu Trp Val Ala Leu 865 870 875	2761
aat ggg cac cga ggg cca agc ccc ggc cag cta aag tac tgg cag aac Asn Gly His Arg Gly Pro Ser Pro Gly Gln Leu Lys Tyr Trp Gln Asn 880 885 890	2809
aca cga gaa ata ccg gac cca aac gag gac tat cta gac tac gtg cat Thr Arg Glu Ile Pro Asp Pro Asn Glu Asp Tyr Leu Asp Tyr Val His 895 900 905	2857
gca gag aag agc cgg ttg gca tca gaa gaa caa atc cta agg gca gct Ala Glu Lys Ser Arg Leu Ala Ser Glu Glu Gln Ile Leu Arg Ala Ala 910 915 920 925	2905
acg tcg atc tac ggg gct cca gga cag gca gag cca ccc caa gct ttc Thr Ser Ile Tyr Gly Ala Pro Gly Gln Ala Glu Pro Pro Gln Ala Phe 930 935 940	2953
ata gac gaa gtt gcc aaa gtc tat gaa atc aac cat gga cgt ggc cca Ile Asp Glu Val Ala Lys Val Tyr Glu Ile Asn His Gly Arg Gly Pro 945 950 955	3001
aac caa gaa cag atg aaa gat ctg ctc ttg act gcg atg gag atg aag Asn Gln Glu Gln Met Lys Asp Leu Leu Leu Thr Ala Met Glu Met Lys	3049

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960	965	970	
cat cgc aat ccc agg cgg gct cta cca aag ccc aag cca aaa ccc aat			3097
His Arg Asn Pro Arg Arg Ala Leu Pro Lys Pro Lys Pro Lys Pro Asn			
975	980	985	
gct cca aca cag aga ccc cct ggt cgg ctg ggc cgc tgg atc agg acc			3145
Ala Pro Thr Gln Arg Pro Pro Gly Arg Leu Gly Arg Trp Ile Arg Thr			
990	995	1000	1005
gtc tct gat gag gac ctt gag tgaggctcct gggagtctcc cgacaccacc			3196
Val Ser Asp Glu Asp Leu Glu			
1010			
cgcgccaggtg tggacaccaa ttccgcctta caacatccca aattggatcc gttcgcgggt			3256
cccct			3261
<210>	6		
<211>	1012		
<212>	PRT		
<213>	Infectious bursal disease virus		
<400>	6		
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Ser Leu Leu Met Pro Thr Thr Gly Pro Ala Ser Ile Pro Asp Asp Thr			
20	25	30	
Leu Glu Lys His Thr Leu Arg Ser Glu Thr Ser Thr Tyr Asn Leu Thr			
35	40	45	
Val Gly Asp Thr Gly Ser Gly Leu Ile Val Phe Phe Pro Gly Phe Pro			
50	55	60	
Gly Ser Ile Val Gly Ala His Tyr Thr Leu Gln Gly Asn Gly Asn Tyr			
65	70	75	80
Lys Phe Asp Gln Met Leu Leu Thr Ala Gln Asn Leu Pro Ala Ser Tyr			
85	90	95	
Asn Tyr Cys Arg Leu Val Ser Arg Ser Leu Thr Val Arg Ser Ser Thr			
100	105	110	
Leu Pro Gly Gly Val Tyr Ala Leu Asn Gly Thr Ile Asn Ala Val Thr			
115	120	125	
Phe Gln Gly Ser Leu Ser Glu Leu Thr Asp Val Ser Tyr Asn Gly Leu			
130	135	140	

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Met Ser Ala Thr Ala Asn Ile Asn Asp Lys Ile Gly Asn Val Leu Val
145 150 155 160

Gly Glu Gly Val Thr Val Leu Ser Leu Pro Thr Ser Tyr Asp Leu Gly
165 170 175

Tyr Val Arg Leu Gly Asp Pro Ile Pro Ala Ile Gly Leu Asp Pro Lys
180 185 190

Met Val Ala Thr Cys Asp Ser Ser Asp Arg Pro Arg Val Tyr Thr Ile
195 200 205

Thr Ala Ala Asp Asp Tyr Gln Phe Ser Ser Gln Tyr Gln Pro Gly Gly
210 215 220

Val Thr Ile Thr Leu Phe Ser Ala Asn Ile Asp Ala Ile Thr Ser Leu
225 230 235 240

Ser Val Gly Gly Glu Leu Val Phe Gln Thr Ser Val His Gly Leu Val
245 250 255

Leu Gly Ala Thr Ile Tyr Leu Ile Gly Phe Asp Gly Thr Thr Val Ile
260 265 270

Thr Arg Ala Val Ala Ala Asn Asn Gly Leu Thr Thr Gly Thr Asp Asn
275 280 285

Leu Met Pro Phe Asn Leu Val Ile Pro Thr Asn Glu Ile Thr Gln Pro
290 295 300

Ile Thr Ser Ile Lys Leu Glu Ile Val Thr Ser Lys Ser Gly Gly Gln
305 310 315 320

Ala Gly Asp Gln Met Ser Trp Ser Ala Arg Gly Ser Leu Ala Val Thr
325 330 335

Ile His Gly Gly Asn Tyr Pro Gly Ala Leu Arg Pro Val Thr Leu Val
340 345 350

Ala Tyr Glu Arg Val Ala Thr Gly Ser Val Val Thr Val Ala Gly Val
355 360 365

Ser Asn Phe Glu Leu Ile Pro Asn Pro Glu Leu Ala Lys Asn Leu Val
370 375 380

Thr Glu Tyr Gly Arg Phe Asp Pro Gly Ala Met Asn Tyr Thr Lys Leu
385 390 395 400

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Ile Leu Ser Glu Arg Asp Arg Leu Gly Ile Lys Thr Val Trp Pro Thr
405 410 415

Arg Glu Tyr Thr Asp Phe Arg Glu Tyr Phe Met Glu Val Ala Asp Leu
420 425 430

Asn Ser Pro Leu Lys Ile Ala Gly Ala Phe Gly Phe Lys Asp Ile Ile
435 440 445

Arg Ala Ile Arg Arg Ile Ala Val Pro Val Val Ser Thr Leu Phe Pro
450 455 460

Pro Ala Ala Pro Leu Ala His Ala Ile Gly Glu Gly Val Asp Tyr Leu
465 470 475 480

Leu Gly Asp Glu Ala Gln Ala Ala Ser Gly Thr Ala Arg Ala Ala Ser
485 490 495

Gly Lys Ala Arg Ala Ala Ser Gly Arg Ile Arg Gln Leu Thr Leu Ala
500 505 510

Ala Asp Lys Gly Tyr Glu Val Val Ala Asn Leu Phe Gln Val Pro Gln
515 520 525

Asn Pro Val Val Asp Gly Ile Leu Ala Ser Pro Gly Val Leu Arg Gly
530 535 540

Ala His Asn Leu Asp Cys Val Leu Arg Glu Gly Ala Thr Leu Phe Pro
545 550 555 560

Val Val Ile Thr Thr Val Glu Asp Ala Met Thr Pro Lys Ala Leu Asn
565 570 575

Ser Lys Met Phe Ala Val Ile Glu Gly Val Arg Glu Asp Leu Gln Pro
580 585 590

Pro Ser Gln Arg Gly Ser Phe Ile Arg Thr Leu Ser Gly His Arg Val
595 600 605

Tyr Gly Tyr Ala Pro Asp Gly Val Leu Pro Leu Glu Thr Gly Arg Asp
610 615 620

Tyr Thr Val Val Pro Ile Asp Asp Val Trp Asp Asp Ser Ile Met Leu
625 630 635 640

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Ser Lys Asp Pro Ile Pro Pro Ile Val Gly Asn Ser Gly Asn Leu Ala
645 650 655

Ile Ala Tyr Met Asp Val Phe Arg Pro Lys Val Pro Ile His Val Ala
660 665 670

Met Thr Gly Ala Leu Asn Ala Cys Gly Glu Ile Glu Lys Val Ser Phe
675 680 685

Arg Ser Thr Lys Leu Ala Thr Ala His Arg Leu Gly Leu Arg Leu Ala
690 695 700

Gly Pro Gly Ala Phe Asp Val Asn Thr Gly Pro Asn Trp Ala Thr Phe
705 710 715 720

Ile Lys Arg Phe Pro His Asn Pro Arg Asp Trp Asp Arg Leu Pro Tyr
725 730 735

Leu Asn Leu Pro Tyr Leu Pro Pro Asn Ala Gly Arg Gln Tyr His Leu
740 745 750

Ala Met Ala Ala Ser Glu Phe Lys Glu Thr Pro Glu Leu Glu Ser Ala
755 760 765

Val Arg Ala Met Glu Ala Ala Ala Asn Val Asp Pro Leu Phe Gln Ser
770 775 780

Ala Leu Ser Val Phe Met Trp Leu Glu Glu Asn Gly Ile Val Thr Asp
785 790 795 800

Met Ala Asn Phe Ala Leu Ser Asp Pro Asn Ala His Arg Met Arg Asn
805 810 815

Phe Leu Ala Asn Ala Pro Gln Ala Gly Ser Lys Ser Gln Arg Ala Lys
820 825 830

Tyr Gly Thr Ala Gly Tyr Gly Val Glu Ala Arg Gly Pro Thr Pro Glu
835 840 845

Glu Ala Gln Arg Glu Lys Asp Thr Arg Ile Ser Lys Lys Met Glu Thr
850 855 860

Met Gly Ile Tyr Phe Ala Thr Pro Glu Trp Val Ala Leu Asn Gly His
865 870 875 880

Arg Gly Pro Ser Pro Gly Gln Leu Lys Tyr Trp Gln Asn Thr Arg Glu
885 890 895

1997-269.ST25.txt

Ile Pro Asp Pro Asn Glu Asp Tyr Leu Asp Tyr Val His Ala Glu Lys
900 905 910

Ser Arg Leu Ala Ser Glu Glu Gln Ile Leu Arg Ala Ala Thr Ser Ile
915 920 925

Tyr Gly Ala Pro Gly Gln Ala Glu Pro Pro Gln Ala Phe Ile Asp Glu
930 935 940

Val Ala Lys Val Tyr Glu Ile Asn His Gly Arg Gly Pro Asn Gln Glu
945 950 955 960

Gln Met Lys Asp Leu Leu Leu Thr Ala Met Glu Met Lys His Arg Asn
965 970 975

Pro Arg Arg Ala Leu Pro Lys Pro Lys Pro Lys Pro Asn Ala Pro Thr
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Gln Arg Pro Pro Gly Arg Leu Gly Arg Trp Ile Arg Thr Val Ser Asp
995 1000 1005

Glu Asp Leu Glu
1010

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<213> Infectious bursal disease virus

<220>
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Glu Val Ser Asp Leu
1 5

aca aac gat cgc agc gat gac aaa cct gca aga tca aac cca aca gat 162
Thr Asn Asp Arg Ser Asp Asp Lys Pro Ala Arg Ser Asn Pro Thr Asp
10 15 20

<210> 8
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<212> DNA
<213> Infectious bursal disease virus

1997-269.ST25.txt

<220>

<221> CDS

<222> (112)..(2745)

<400> 8

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ccgccgctgg ctgccacggt agtggctcct cttcttgatg attctgccac c atg agt      117
                                     Met Ser
                                     1

gac att ttc aac agt cca cag gcg cga agc acg atc tca gca gcg ttc      165
Asp Ile Phe Asn Ser Pro Gln Ala Arg Ser Thr Ile Ser Ala Ala Phe
                    5                    10                    15

ggc ata aag cct act gct gga caa gac gtg gaa gaa ctc ttg atc cct      213
Gly Ile Lys Pro Thr Ala Gly Gln Asp Val Glu Glu Leu Leu Ile Pro
    20                    25                    30

aaa gtt tgg gtg cca cct gag gat ccg ctt gcc agc cct agt cga ctg      261
Lys Val Trp Val Pro Pro Glu Asp Pro Leu Ala Ser Pro Ser Arg Leu
    35                    40                    45                    50

gca aag ttc ctc aga gag aac ggc tac aaa gtt ttg cag ccg cgg tct      309
Ala Lys Phe Leu Arg Glu Asn Gly Tyr Lys Val Leu Gln Pro Arg Ser
                    55                    60                    65

ctg ccc gag aat gag gag tat gag acc gac caa ata ctc cca gac tta      357
Leu Pro Glu Asn Glu Glu Tyr Glu Thr Asp Gln Ile Leu Pro Asp Leu
                    70                    75                    80

gca tgg atg cga cag ata gaa ggg gct gtt tta aaa ccc act cta tct      405
Ala Trp Met Arg Gln Ile Glu Gly Ala Val Leu Lys Pro Thr Leu Ser
                    85                    90                    95

ctc cct att gga gat cag gag tac ttc cca aag tac tac cca aca cat      453
Leu Pro Ile Gly Asp Gln Glu Tyr Phe Pro Lys Tyr Tyr Pro Thr His
    100                    105                    110

cgc cct agc aag gag aag ccc aat gcg tac ccg cca gac atc gca cta      501
Arg Pro Ser Lys Glu Lys Pro Asn Ala Tyr Pro Pro Asp Ile Ala Leu
    115                    120                    125                    130

ctc aag cag atg att tac ctg ttt ctc cag gtt cca gag gcc aac gag      549
Leu Lys Gln Met Ile Tyr Leu Phe Leu Gln Val Pro Glu Ala Asn Glu
                    135                    140                    145

ggc cta aag gat gaa gta acc ctc ttg acc caa aac ata agg gac aag      597
Gly Leu Lys Asp Glu Val Thr Leu Leu Thr Gln Asn Ile Arg Asp Lys
                    150                    155                    160

gcc tat gga agt ggg acc tac atg gga caa gca act cga ctt gtg gcc      645
Ala Tyr Gly Ser Gly Thr Tyr Met Gly Gln Ala Thr Arg Leu Val Ala
                    165                    170                    175

atg aag gag gtc gcc act gga aga aac cca aac aag gat cct cta aag      693
Met Lys Glu Val Ala Thr Gly Arg Asn Pro Asn Lys Asp Pro Leu Lys
    180                    185                    190

ctt ggg tac act ttt gag agc atc gcg cag cta ctt gac atc aca cta      741
Leu Gly Tyr Thr Phe Glu Ser Ile Ala Gln Leu Leu Asp Ile Thr Leu

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gga Gly	cta Leu 260	cca Pro	tat Tyr	gta Val	ggt Gly	cgc Arg 265	acc Thr	aaa Lys	gga Gly	gag Glu	aca Thr 270	att Ile	ggc Gly	gag Glu	atg Met	933
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caa Gln	ggt Gly	gca Ala	ggg Gly	aca Thr 295	aag Lys	ggg Gly	tca Ser	aac Asn	aag Lys 300	aag Lys	aag Lys	cta Leu	ctc Leu	agc Ser 305	atg Met	1029
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gaa Glu	agg Arg	tac Tyr 325	gac Asp	aaa Lys	agt Ser	aca Thr	tgg Trp 330	ctc Leu	acc Thr	aag Lys	acc Thr	cgg Arg 335	aac Asn	ata Ile	tgg Trp	1125
tca Ser	gct Ala 340	cca Pro	tcc Ser	cca Pro	aca Thr	cac His 345	ctc Leu	atg Met	atc Ile	tcc Ser	atg Met 350	atc Ile	acc Thr	tgg Trp	ccc Pro	1173
gtg Val 355	atg Met	tcc Ser	aac Asn	agc Ser	cca Pro 360	aat Asn	aac Asn	gtg Val	ttg Leu	aac Asn 365	att Ile	gaa Glu	ggg Gly	tgt Cys	cca Pro 370	1221
tca Ser	ctc Leu	tac Tyr	aaa Lys	ttc Phe 375	aac Asn	ccg Pro	ttc Phe	aga Arg	gga Gly 380	ggg Gly	ttg Leu	aac Asn	agg Arg	atc Ile 385	gtc Val	1269
gag Glu	tgg Trp	ata Ile	ttg Leu 390	gcc Ala	ccg Pro	gaa Glu	gaa Glu	ccc Pro 395	aag Lys	gct Ala	ctt Leu	gta Val	tat Tyr 400	gcg Ala	gac Asp	1317
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tac Tyr 435	ata Ile	ctc Leu	acc Thr	aga Arg	ggg Gly 440	tgg Trp	tca Ser	gac Asp	aac Asn	ggc Gly 445	gac Asp	cca Pro	atg Met	ttc Phe	aat Asn 450	1461

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Asp Ser Ser Cys Leu Ile Met Asn Leu Gln Ile Lys Thr Tyr Gly Gln	
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Gly Ser Gly Asn Ala Ala Thr Phe Ile Asn Asn His Leu Leu Ser Thr	
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Glu Arg Ser Ile Asp Asp Ile Arg Gly Lys Leu Arg Gln Leu Val Leu	
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Leu Ala Gln Pro Gly Tyr Leu Ser Gly Gly Val Glu Pro Glu Gln Ser	
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Ser Pro Thr Val Glu Leu Asp Leu Leu Gly Trp Ser Ala Thr Tyr Ser	
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Lys Asp Leu Gly Ile Tyr Val Pro Val Leu Asp Lys Glu Arg Leu Phe	
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Cys Ser Ala Ala Tyr Pro Lys Gly Val Glu Asn Lys Ser Leu Lys Ser	
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Lys Val Gly Ile Glu Gln Ala Tyr Lys Val Val Arg Tyr Glu Ala Leu	
615 620 625	
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Arg Leu Val Gly Gly Trp Asn Tyr Pro Leu Leu Asn Lys Ala Cys Lys	
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Asn Asn Ala Gly Ala Ala Arg Arg His Leu Glu Ala Lys Gly Phe Pro	
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Leu Asp Glu Phe Leu Ala Glu Trp Ser Glu Leu Ser Glu Phe Gly Glu	
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Ala Glu Leu Asn Lys Pro Val Pro Pro Lys Pro Pro Asn Val Asn Arg	

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gaa	aga	tca	gaa	act	ctg	tca	gac	ctt	ctg	gag	aaa	gcc	gac	atc	gcc	2469				
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Asn	Pro	Gln	Thr	Ala	Ser	Asn	Pro	Val	Val	Gly	Leu	His	Leu	Pro	Ala					
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Lys	Arg	Ala	Thr	Gly	Val	Gln	Ala	Ala	Leu	Leu	Gly	Ala	Gly	Thr	Ser					
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